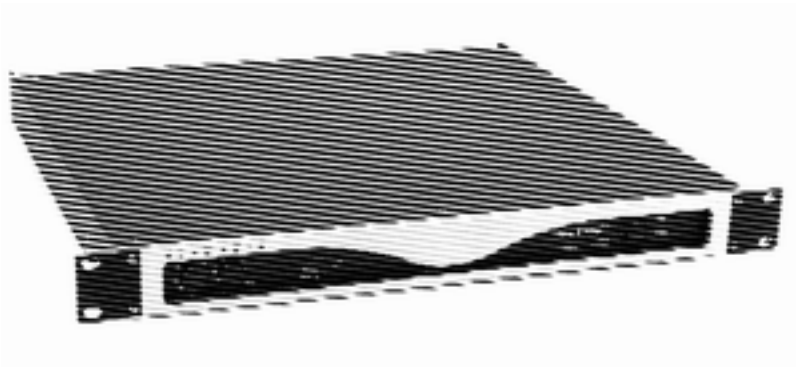
the t.amp

D3400

digital power amplifier



th•mann
MUSIC IS OUR PASSION

user manual

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1 General notes

This user manual contains important information on the safe operation of the device. Read and follow all safety notes and all instructions. Save this manual for future reference. Make sure that it is available to all persons using this device. If you sell the device to another user, be sure that they also receive this manual.

Our products are subject to a process of continuous development. We therefore reserve the right to make changes without notice.

Symbols and signal words

This section gives an overview of the symbols and signal words used in this user manual.

Signal word	Meaning
DANGER!	This combination of symbol and signal word indicates an immediate dangerous situation that will result in death or serious injury if it is not avoided.
CAUTION!	This combination of symbol and signal word indicates a possible dangerous situation that can result in minor injury if it is not avoided.
NOTICE!	This combination of symbol and signal word indicates a possible dangerous situation that can result in material and environmental damage if it is not avoided.

Warning signs	Type of danger
	Warning – high-voltage.

Warning signs	Type of danger
	Warning – danger zone.

2 Safety instructions

Intended use

This device amplifies electric audiofrequency signals, to operate passive speakers. Use the device only as described in this user manual. Any other use or use under other operating conditions is considered to be improper and may result in personal injury or property damage. No liability will be assumed for damages resulting from improper use.

This device may be used only by persons with sufficient physical, sensorial, and intellectual abilities and having corresponding knowledge and experience. Other persons may use this device only if they are supervised or instructed by a person who is responsible for their safety.

Safety

DANGER!

Danger for children

Ensure that plastic bags, packaging, etc. are disposed of properly and are not within reach of babies and young children. Choking hazard!

Ensure that children do not detach any small parts (e.g. knobs or the like) from the unit. They could swallow the pieces and choke!

Never let children unattended use electrical devices.

DANGER!

Electric shock caused by high voltages inside

Within the device there are areas where high voltages may be present. Never remove any covers.

There are no user-serviceable parts inside.

DANGER!

Electric shock caused by short-circuit

Always use proper ready-made insulated mains cabling (power cord) with a protective contact plug. Do not modify the mains cable or the plug. Failure to do so could result in electric shock/death or fire. If in doubt, seek advice from a registered electrician.

CAUTION!

Possible hearing damage

With loudspeakers or headphones connected, the device can produce volume levels that may cause temporary or permanent hearing impairment.

Do not operate the device permanently at a high volume level. Decrease the volume level immediately if you experience ringing in your ears or hearing impairment.

NOTICE!

Risk of fire

Do not block areas of ventilation. Do not install the device near any direct heat source. Keep the device away from naked flames.

NOTICE!

Operating conditions

This device has been designed for indoor use only. To prevent damage, never expose the device to any liquid or moisture. Avoid direct sunlight, heavy dirt, and strong vibrations.

NOTICE!

Power supply

Before connecting the device, ensure that the input voltage (AC outlet) matches the voltage rating of the device and that the AC outlet is protected by a residual current circuit breaker. Failure to do so could result in damage to the device and possibly injure the user.

Unplug the device before electrical storms occur and when it is unused for long periods of time to reduce the risk of electric shock or fire.

NOTICE!

Magnetic fields

The device generates strong magnetic fields that can interfere with the function of poorly shielded devices. The strongest magnetic fields are directly above and below the power amplifier. Therefore, never place sensitive devices such as pre-amplifiers, radio transmission systems, or tape decks directly above or below the power amplifier. When installing the power amplifier into a rack, you should place it in the lowest position, and further equipment such as pre-amplifiers in the highest position.

3 Installation and start up

Unpack and check carefully there is no transportation damage before using the unit.

Establish all connections as long as the unit is switched off. Use the shortest possible high-quality cables for all connections.

DANGER!

Electric shock caused by high voltages at the power amplifier output

The output voltages of modern high-performance amplifiers may result in death or serious injury.

Never touch the bare ends of loudspeaker cables when the amplifier is on.

NOTICE!

Magnetic fields

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Necessary distances

To avoid damage by overheating you have to ensure good venting by keeping the following minimum space around the unit:

- on both sides: 5 cm
- above: 10 cm
- behind: 10 cm

Rack mounting

The unit has been designed for rack mounting in a standard 19-inch rack; it occupies one rack unit.

XLR connectors for signal input and output

The unit offers balanced XLR/1/4" combo jacks for signal inputs and XLR mounting plugs for signal outputs. Please note the following illustration and table for pin assignment.

1	Ground
2	Signal (+)
3	Signal (–)

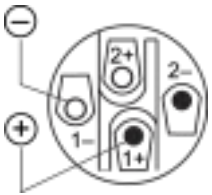
1/4" jack for signal inputs

Please note the following illustration and table for 1/4" TS jack pin assignment.

1	Signal
2	Ground

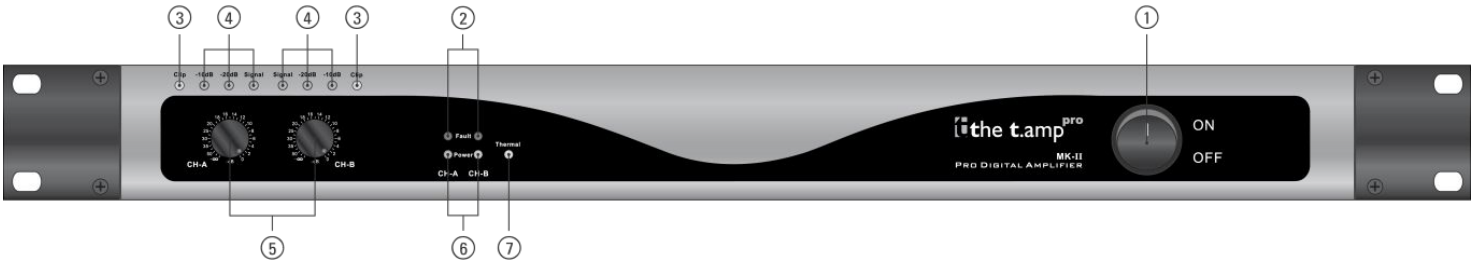
speakON plugs for speaker connectors

The illustration to the left shows the lockable speakON mounting socket.

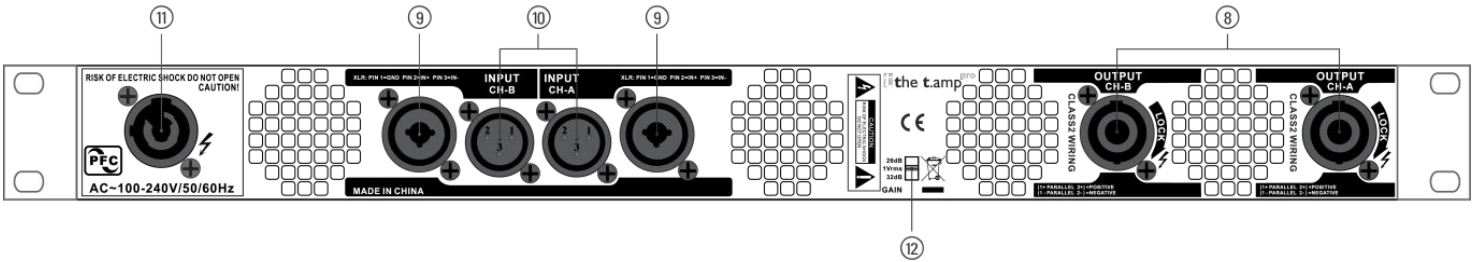


4 Connectors and operating elements

Front view



Rear view



Power switch (1)

To switch the unit on and off.

"Fault" LEDs (2)

These LEDs light up for 3 seconds after the unit is switched on. After that the unit is ready for use. If these LEDs light up during operation, the protection circuit is activated in the respective channel. These circuits protect the unit against overheating and the speakers against direct current.

As long as the LED lights up, the speaker output of that channel is disconnected.

When the unit is operable again or the defect was corrected, the LED goes out and the speaker output of the respective channel is reconnected.

"Clip" LEDs (3)

These LEDs light up, if the distortion in the respective channel exceeds 1 %. This indicates overloading (clipping) due to excessive input level.

"Signal" LEDs, "–20", "–10" (4)

These three LEDs per channel show the output level.

The "Signal" LED lights up, when the unit outputs a signal. The "–20" LED indicates an output level above –20 dB. The "–10" LED indicates an output level above –10 dB.

If these LEDs light up, although no input signal is present, an error has occurred. Then turn the volume control of the respective channel all down and disconnect the signal input. If the LEDs continue to light, the unit might have been damaged.

Volume control (5)

Use these controls to adjust the output level for the respective channel. The scale inscription indicates the damping of the output signal, from infinite (no output) to zero (full power). Settings below –14 should be avoided in practice, because then the amp is not working in the optimum dynamic range (headroom).

"Power" LEDs (6)

These LEDs light up, when the unit is switched on. If they are not lit, although the power switch is in ON position, check the voltage supply.

"Thermal" LED (7)

This LED lights up, when the internal temperature is too high. Then an automatic protection circuit reduces the output power. If the temperature keeps rising, the amp will automatically power down. In this case the "Fault" LEDs (2) light up.

Speaker outputs left/right (8)

Mounting socket for lockable speakON connectors.

Signal inputs left/right (9)

Balanced XLR/1/4" combo jacks for left and right input channel. Here you can connect both balanced signals (using XLR plugs) or unbalanced signals (using 1/4" TS plugs).

Some mixing consoles provide unbalanced signals to XLR outputs. In this case pin 3 should be bridged to pin 1 or remain unwired.

Signal outputs left/right (10)

The signal inputs and these XLR mounting plugs are wired through. Here you can connect further amps, for example. The input signal is available, even if the unit is switched off.

Mains connection (11)

AC 230 V voltage supply connector (lockable powerCON mounting socket).

Gain (12)

Use this switch to set the gain of the amp, if required.

Position	Description
26dB	Gain/Compression to 26 dB
1Vrms	No compression, input sensitivity: 1 V_{eff}
32dB	Gain/Compression to 32 dB

5 Technical specifications

	8 Ω	4 Ω	2 Ω
Maximum output power (THD = 1 %, 1 kHz)	1000 W	1800 W	2000 W
Power consumption @ 1/8 of maximum output power and pink noise	300 W	540 W	650 W
Voltage swing (THD = 1 %, 1 kHz)	89,4 V_{eff}		
Voltage gain	26 dB / 1 V / 32 dB		
Slew rate @ 1 kHz	45 V/ms		
Input sensitivity @ rated output power, 1 kHz	1 V_{eff}		
Typ. THD @ 10 % of rated output power, 1 kHz	< 0,1 %		
Dynamic intermodulation (DIM30) 3,15 kHz, 15 kHz	< 0,1 %		
Crosstalk, @ 10 % of rated output power, 1 kHz	> 75 dB		
Frequency response	20 Hz…20 kHz ±0,5 dB		

Input impedance	20 kΩ (balanced) 10 kΩ (unbalanced)
Damping factor (100 Hz…1 kHz, 4 Ω)	> 1000
S/N ratio (A weighted)	108 dB
Supply voltage	AC 100 – 230 V, 50 Hz
Dimensions (B × T × H)	483 mm × 44 mm × 414 mm
Weight	10 kg

6 Protecting the environment

Disposal of the packaging material

For the transport and protective packaging, environmentally friendly materials have been chosen that can be supplied to normal recycling.

Ensure that plastic bags, packaging, etc. are properly disposed of.

Do not just dispose these materials with your normal household waste, but make sure that they are fed to a recovery. Please follow the notes and markings on the packaging.

Disposal of your old device

This device is subject to the European directive 2002/96/EC.

Do not dispose the device with your normal household waste.

Dispose this device through an approved waste disposal firm or through your local waste facility. When discarding the device, comply with the rules and regulations that apply in your country. If in doubt, consult your local waste disposal facility.